Reptile Scale Overlay on a Human Arm: A Drawing Guide

Original tasks 1, 2, 3 / complete keys

Task 1

An arm outline is 10 cm wide at the upper arm. You choose a hypothetical scale width of 2 cm. How many scales fit across one full row, and how should the outer scales look?

Answer: Five scales fit across the full row. The outer scales should appear narrower than the center scales because they wrap toward the far side of the cylinder.

Reason: 10 divided by 2 equals 5. The count is planned across the full width; compression at the edges is a drawing effect, not a change in count.

Check: Divide the row width by the scale width and confirm the result is 5. Check that the two outer scales are visibly narrower than the middle three.

Task 2

You draw four rows on an arm. Each row has a baseline. Describe how to check that the rows follow the arm's cylinder rather than lying flat.

Answer: Trace the center line and confirm each baseline bows away from the viewer on the near side and tightens on the far side. Also check that scales near the outline edges are narrower than scales near the center line in every row.

Reason: A flat pattern has straight baselines and uniform scale widths. A cylindrical pattern has curved baselines and edge compression.

Check: Place a straight edge along each baseline; it should not lie flat against the page. Compare center and edge scale widths in the same row.

Task 3

A drawing shows a light direction from the upper left. The near side of the arm is light, but the far edge is also drawn light. What is the mistake and how do you fix it?

Answer: The mistake is inconsistent shading: the far edge should be darker because it faces away from the light. Fix it by shifting all tones darker toward the far edge while keeping the upper-left light direction.

Reason: Shading must follow the chosen light direction across the whole cylinder. A light far edge contradicts the upper-left source.

Check: Mark the light direction on the page and scan the pattern from near to far edge. Tones should grow darker toward the far edge.

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Original tasks 4 / complete keys

Task 4

You want to vary scale size deliberately in one patch. State a convention that allows this and describe how a viewer can check it.

Answer: State that scales in the patch are one-half the width of surrounding scales and that the patch is centered on the arm's near side. A viewer can measure three patch scales and three surrounding scales and confirm the one-half ratio.

Reason: Deliberate variation is valid if it is stated and measurable. Without a stated convention, size variation looks like an error.

Check: Measure the patch scales and surrounding scales, compute the ratio, and compare it to the stated convention.

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Source rubric / reflection

- [ ] Convention stated: shape, row direction, and scale size are written beside the drawing.
- [ ] Shape consistency: scales follow the chosen shape within a reasonable range.
- [ ] Row continuity: every row crosses the arm from edge to edge.
- [ ] Cylinder wrapping: scales compress near the outline edges and widen near the center line.
- [ ] Shading logic: light direction is consistent and the shadow side is darker.
- [ ] Overlap clarity: lower edges overlap the row below in a consistent direction.
- [ ] Valid alternatives accepted: different shapes, row directions, or light directions are allowed if the convention is followed.

Reflection: What did you check, what did you change, and what will you try next?